# Improved Lab Notation

**Colour Code**
The lab notation is colour coded to facilitate the understanding of the information. It is not strictly necessary that the Notation is colour coded for complete understanding. However, it has been found to be more visually friendly and promote faster understanding of the protocol.

The colours have been chosen to be colour blind friendly. Specially, it has been designed for colour-blind people that have protanopia, which is the most common type of colour blindness, having an incidence of up to 8% in males and 0.5% in females.

| | |
|---|---|
| Action | Pink |
| Reagents | brown |
| Materials | black |
| Sterility of Protocol | blue |
| Comments | Yellow |

**Upper and Lower Cases**
Actions and/or equipment are represented using the notation in upper case. The reagents can be represented in both upper or lower cases depending on how they are known to the science community and how they are likely to be most easily identified.

**Indentations**
The lab notation has several indentations to help the understanding to the scientist of what step comes under each action. They can be regarded just like in a programming language or as subheading. Indentations in this lab notation normally follow an action

**Brackets**
Brackets are incorporated to help characterize/define the reagent, material or ACTION being performed. Examples of how they are used are shown in the table above.

**Units**
For improved standardization, all units used to define quantities must be SI units.

**Signs**
The plus sign (+) is to be use only when one material/reagent is being added to another, and be used specifically and only in the order the action takes place.

The equal sign (=) identifies the result of an action and is important to name the mixture formed so that the resultant mixture can then be used more easily when it is used later in the protocol.

e.g: m_cyl (ddH20, 100ml) + c_flask (LB, 2g)
= c_flask(LBmix) - *This can only mean that the contents of the measuring cylinder are being added to the contents of the conical flask. The result is a conical flask containing an LB mix*

| **Material** | **Code** | **Explanation** | **Example** |
|---|---|---|---|
| Conical Flask | c_flask (cont(s), w, mv) | c_flask(content(solid), weight)<br><br>c_flask (content(liquid), v)) | |
| Scalpel | scalpel | | |
| Autoclave Tape | aclv_t | | |
| Water Bath | H20_Bath | | |
| Distilled water | ddH2O | | |
| Duran Bottle | duran(cont, v) | duran (contents, volume) | duran (LB, 500ml, 100ml) |
| Eppendorf Tube | epp(l, v) | epp (label, volume using) | epp (lipase, 1ml) |
| Agar Plate | plate (r, d) | agar plate (resistance (if any), date) | plate (cm, 31/7/2014) |
| Measuring Cylinder | m_cyl (cont, v) | cylinder (contents, volume using) | m_cyl (H2O, 1000ml, 10ml) |
| Well Plate | w_well_plate (n) | number of wells_well_plate(number of wells actually used) | 24_well_plate (10) |
| Slides | slide | | |
| Electrophoresis Gel Tray | eletro_gel_tray | | |
| Electrophoresis Gel Tank | electro_gel_tank | | |

| Reagents | Code | Explanation | Example |
|---|---|---|---|
| Ethanol | eth | | |
| Alpha cells | α-C | | |
| Agar | agar | | |
| Alpha select chemically competent cells | α-CComp | | |
| Alpha select electrocompetent cells | α-EComp | | |
| DH5α Cells | DH5α-C | | |
| DH5α chemically competent cells (E.Coli) | DH5α-CComp | | |
| Chloramphenicol | cm (date) | | |
| Lysogeny broth | LB | | |
| Ampicillin | am (date) | ap (date it was made) | |
| Kanamycin | kn (date) | kn (date it was made) | |
| Tetracyclin | tc (date) | tc(date it was made) | |
| Phosphate Buffer Saline | PBS | | |
| DAPI Stain | DAPI | | |
| Glycerol | Glycerol | | |
| Triton | Triton | | |
| Agarose | Agarose | | |
| Tris Acetic acid EDTA | TAE | | TAE(1x) |
| Ethidium Bromide | EtBr | | |

| Command | Code | Explanation | Example |
|---|---|---|---|
| Autoclave | ACLV | | |
| Centrifuge | CENT(cont, speed, t, T) | CENT (contents, speed (g), time, temperature) | CENT (overnight, 11000, 10mins, 4) |
| Cover | COV (mat) | COV(material) | COV(cotton, foil) |
| Scale | SCALE (s, w) | weigh out (sample, weight) | SCALE (agarose, 0.5g) |
| Freeze | FREEZE(s, T) | freeze (sample, temperature) | FREEZE (DH5α_CComp, -80) |
| Gel electrophoresis | GE (E, L, t, volt) | run a gel electrophoresis (type of gel, ladder, time, voltage) | GE (agarose, 1kb HyperLadder, 1hour, 100V) |
| Bioincubate | BIOINC (s, t, T, rpm) | incubate (sample, time, temperature, rpm) | BIOINC (overnight, 12hours, 37, 150) |
| Measure Optical Density | SPEC (s, OD) | spectrometer (sample, optical density used to measure (nm)) | SPEC (overnight, 600nm) |
| Vortex | VORTEX(s, t) | vortex (sample, time) | VORTEX(XbaI construct, 5S) |
| Discard | DISCARD | | |
| Microwave | MICRWV (p, t) | (power, time) | |
| Streak | STREAK | | |
| Heat Shock | HEATSHOCK (temp, time, medium) | | |
| Label | LABEL (material, name) | LABEL (what we are labelling, what the label is) | |
| Dry Block Heating Machine | DBH(cont, temp, t) | DBH(contents(label), temperature, time) | DBH(α-CComp, 42˚C, 30s) |
| Swirl | SWIRL | | |
| Pipette | PIP(cont, v) | PIP (content/label, volume) | PIP(α-C, 55µl) |

| | | | |
|---|---|---|---|
| Set | SET(t) | Allow to set for the minimum duration of t | SET(time) |
| Remove | REMOVE(i, loc) | REMOVE(item, location)<br><br>ie: Remove( what?, from where?) | REMOVE(comb, electro_gel_tray) |

| Conditions | Code | Explanation | Example |
|---|---|---|---|
| Sterile | Ster | | |
| Non-sterile | Non-Ster | | |